

C L A I M S

1. A retractable antenna comprising:
 an outer elongate telescopic element extending along an elongate axis;
 an inner elongate telescopic element which is slidable along said elongate axis with respect to said outer elongate telescopic element from a fully retracted position to a fully extended position; and
 an extended position retaining spring fixedly positioned with respect to said outer elongate telescopic element for frictional extended position retaining engagement with said inner elongate telescopic element when said inner elongate telescopic element is in said fully extended position but not when said inner elongate telescopic element is generally in a retracted position.
2. A retractable antenna according to claim 1 and wherein said outer elongate telescopic element is formed with a throughgoing bore which extends along said elongate axis from a base end to an opposite end.
3. A retractable antenna according to claim 2 and wherein said throughgoing bore is formed to have a first inner diameter D1 at a first elongate portion thereof which extends along a majority of its length extending from said base end and a second inner diameter D2 which is greater than said first inner diameter D1, at a second elongate portion thereof near but spaced from said opposite end.
4. A retractable antenna according to claim 3 and wherein said second elongate portion defines a recess for receiving said extended position retaining spring.
5. A retractable antenna according to claim 3 and wherein said throughgoing bore also comprises a third elongate portion adjacent said opposite end having a third inner diameter D3, which is greater than said second inner diameter D2, said third elongate portion defining a recess for receiving a retaining ring for retaining said spring in position along said elongate axis.

6. A retractable antenna according to claim 5 and wherein said third elongate portion is necked inwardly adjacent said opposite end.

7. A retractable antenna according to claim 4 and wherein said extended position retaining spring has a generally cylindrical configuration defining an elongate gap extending along the length thereof, a pair of incomplete end rings and generally elongate portions extending between said rings, said elongate portions being separated from each other by elongate slots and being slightly bent inwardly so as to together define a waist at a frictional engagement location therealong, at which inner facing surfaces of said generally elongate portions define, at rest, an imaginary circle having an inner diameter D4, less than said first inner diameter D1.

8. A retractable antenna according to claim 7 and wherein said inner elongate telescopic element has a back end and a forward end and includes a back cylindrical portion, near said back end, having an outer diameter D5, which is at least equal to said inner diameter D4 but less than said first inner diameter D1, so as to be frictionally engaged by said extended position retaining spring and a main cylindrical portion, forward of said back cylindrical portion, having an outer diameter D6, which is smaller than said inner diameter D4, so as not to be significantly frictionally engaged by said extended position retaining spring.

9. A retractable antenna according to claim 8 wherein in a generally non-extended orientation said main cylindrical portion lies inside of said extended position retaining spring, whereby due to the outer diameter D6 of said main cylindrical portion being less than the inner diameter D4 of said extended position retaining spring at said frictional engagement location, substantial frictional engagement of and consequent wear on said main cylindrical portion and said spring are avoided and wherein in fully extended orientation said back cylindrical portion lies inside of said spring, whereby due to the outer diameter D5 of said back cylindrical portion being at least equal to the inner diameter D4 of said extended position retaining spring at said frictional engagement location substantial frictional engagement of said back cylindrical portion

and said extended position retaining spring is provided for desired retention of said antenna in an extended operative orientation.

10. A retractable antenna according to claim 1 and wherein said extended position retaining spring is a unitary element.

11. A retractable antenna according to claim 10 and wherein said extended position retaining spring has a generally cylindrical configuration defining an elongate gap extending along the length thereof, a pair of incomplete end rings and generally elongate portions extending between said rings, said elongate portions being separated from each other by elongate slots and being slightly bent inwardly so as to together define a waist at a frictional engagement location therealong, at which inner facing surfaces of said generally elongate portions define, at rest, an imaginary circle having an inner diameter D4.

12. A retractable antenna according to claim 11 and wherein said inner elongate telescopic element has a back end and a forward end and includes a back cylindrical portion, near said back end, having an outer diameter D5, which is at least equal to said inner diameter D4 so as to be frictionally engaged by said extended position retaining spring and a main cylindrical portion, forward of said back cylindrical portion, having an outer diameter D6, which is smaller than said inner diameter D4, so as not to be significantly frictionally engaged by said extended position retaining spring.

13. A retractable antenna according to claim 12 wherein in a generally non-extended orientation said main cylindrical portion lies inside of said extended position retaining spring, whereby due to the outer diameter D6 of said main cylindrical portion being less than the inner diameter D4 of said extended position retaining spring at said frictional engagement location, substantial frictional engagement of and consequent wear on said main cylindrical portion and said spring are avoided and wherein in fully extended orientation said back cylindrical portion lies inside of said spring, whereby due to the outer diameter D5 of said back cylindrical portion being at least equal to the inner diameter D4 of said extended position retaining spring at said frictional

engagement location substantial frictional engagement of said back cylindrical portion and said extended position retaining spring is provided for desired retention of said antenna in an extended operative orientation.